In the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application and is directed to the claims as amended in the international stage.

1. (Currently Amended) A process for preparing transformed plant cells or organisms, ~~which comprises the following steps~~ comprising:

a) transforming a population of plant cells, ~~with~~ the cells of said population containing at least one marker protein capable of causing directly or indirectly a toxic effect for said population, with at least one nucleic acid sequence ~~to be~~ inserted in combination with at least one double-stranded marker protein ribonucleic acid sequence or an expression cassette or expression cassettes ensuring expression thereof capable of reducing the expression of at least one marker protein, and

b) selecting transformed plant cells whose genome contains said nucleic acid sequence and which have a growth advantage over nontransformed cells, due to the action of said double-stranded marker protein ribonucleic acid sequence, from said population of plant cells, the selection being carried out under conditions under which the marker protein can exert its toxic effect on the nontransformed cells.

2. (Currently Amended) The process as claimed in claim 1, wherein the marker protein is capable of converting directly or indirectly a substance X which is nontoxic for said population of plant cells into a substance Y which is toxic for said population, ~~which process comprises the following steps~~ and further comprising:

a) transforming the population of plant cells with at least one nucleic acid sequence to be inserted in combination with at least one double-stranded marker protein ribonucleic acid sequence or an expression cassette or expression cassettes ensuring expression thereof capable of reducing the expression of at least one marker protein, and

b) treating said population of plant cells with the substance X at a concentration which causes a toxic effect for nontransformed cells, due to the conversion by the marker protein, and

c) selecting transformed plant cells whose genome contains said nucleic acid sequence and which have a growth advantage over nontransformed cells, due to the action of said double-stranded marker protein ribonucleic acid sequence, from said population of plant cells, the selection being carried out under conditions under which the marker protein can exert its toxic effect on the nontransformed cells.

3. (Original) The process as claimed in claim 2, wherein the nontoxic substance X is a substance which does not naturally occur in plant cells or organisms or occurs naturally therein only at a concentration which can essentially not cause any toxic effect.

4. (Original) The process as claimed in claim 2 or 3, wherein the substance X is a substance selected from the group consisting of proherbicides, proantibiotics, nucleoside analogs, 5-fluorocytosine, auxinamide compounds, naphthalacetamide, dihaloalkanes, Acyclovir, Ganciclovir, 1,2-deoxy-2-fluoro-b-D-arabinofuranosil-5-iodouracil, 6-thioxanthine, allopurinol, 6-methylpurine deoxyribonucleoside, 4-aminopyrazolopyrimidine, 2-amino-4-methoxybutanoic acid, 5-(trifluoromethyl)thioribose and allyl alcohol.

5. (Currently Amended) The process as claimed in ~~any of claims 1 to 4~~ claim 1, wherein the marker protein is selected from the group consisting of cytosine deaminases, cytochrome P-450 enzymes, indoleacetic acid hydrolases, haloalkane dehalogenases, thymidine kinases, guanine phosphoribosyl transferases, hypoxanthine phosphoribosyl transferases, xanthine guanine phosphoribosyl transferases, purine nucleoside phosphorylases, phosphonate monoester hydrolases, indoleacetamide synthases, indoleacetamide hydrolases, adenine phosphoribosyl transferases, methoxinine dehydrogenases, rhizobitoxin synthases, 5-methylthioribose kinases and alcohool dehydrogenases.

6. (Currently Amended) The process as claimed in ~~any of claims 1 to 5~~ claim 1, wherein the marker protein is encoded by

a) a sequence described by the GenBank accession number S56903, M32238, N0003308, AE009419, AB016260, N0002147, M26950, J02224, V00470, V00467, U10247, M13422, X00221, M60917, U44852, M61151, AF039169, AB025110, AF212863, AC079674, X77943, M12196, AF172282, X04049 or AF253472

b) a sequence according to SEQ ID N0: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40,42, 44, 46 or 48.

7. (Currently Amended) The process as claimed in any of claims 1 to 6 ~~any of claims 1 to 5~~ claim 1, wherein a sequence coding for a resistance to at ~~lesat~~ least one toxin, antibiotic or herbicide is introduced together with the nucleic acid sequence to be inserted and selection is carried out additionally using the toxin, antibiotic or herbicide.

8. (Currently Amended) The process as claimed in ~~any of claims 1 to 7~~ claim 1, wherein the nucleic acid sequence to be inserted into the genome of the plant cell or of the plant organism comprises at least one expression cassette capable of expressing, under the control of a promoter functional in plant cells or in plant organisms, an RNA and/or a protein which does not cause the expression, amount, activity and/or function of a marker protein to be reduced.

9. (Currently Amended) The process as claimed in ~~any of claims 1 to 8~~ claim 1, wherein the plant cell is part of a plant organism or of a tissue, part, organ, cell culture or propagation material derived therefrom.

10. (Currently Amended) The process as claimed in ~~any of claims 1 to 9~~ claim 1 for preparing transformed plant cells or organisms, ~~which comprises the following steps~~ further comprising:

a) transforming a population of plant cells which comprises at least one non-endogenous (preferably non-plant) marker protein capable of converting directly or indirectly a substance X which is nontoxic for said population of plant cells into a substance Y which is toxic for said opulation, with at least one nucleic acid sequence to inserted in combination with at least one

nucleic acid sequence coding for a double-stranded marker protein ribonucleic acid sequence or an expression cassette or expression cassettes ensuring expression thereof ribonucleic acid sequence capable of reducing the expression, amount, activity and/or function of said marker protein, ~~and~~

b) treating said population of plant cells with the substance X at a concentration which causes a toxic effect for nontransformed cells, due to the conversion by the marker protein, ~~and~~

c) selecting transformed plant cells (and/or populations of plant cells, such as plant tissues or plants) whose genome contains said nucleic acid sequence and which have a growth advantage over nontransformed cells, due to the action of said double-stranded marker protein ribonucleic acid sequence, from said population of plant cells, the selection being carried out under conditions under which the marker protein can exert its toxic effect on the nontransformed cells, ~~and~~

d) regenerating fertile plants, and

e) eliminating by crossing the nucleic acid sequence coding for the marker protein and isolating fertile plants whose genome contains said nucleic acid sequence but does not contain any longer the sequence coding for the marker protein.

11. (Currently Amended) An amino acid sequence coding for a plant 5-methylthioribose kinase, wherein said amino acid sequence ~~contains~~ comprises at least one sequence selected from the group consisting of SEQ ID NO: 60, 62, 64, 66 ~~or~~ and 68.

12. (Currently Amended) A nucleic acid sequence coding for a plant 5-methylthioribose kinase, wherein said nucleic acid sequence ~~contains~~ comprises at least one sequence selected from the group consisting of SEQ ID NO: 59, 61, 63, 65 ~~or~~ and 67.

13. (Currently Amended) A double-stranded RNA molecule, comprising

a) a "sense" RNA strand comprising at least one ribonucleotide sequence which is essentially identical to at least a part of the "sense" RNA transcript of a nucleic acid sequence coding for a marker protein, and

b) an "antisense" RNA strand which is essentially~~, preferably fully,~~ complementary to the RNA sense strand under a).

14. (Currently Amended) The double-stranded RNA molecule as claimed in claim 13, wherein the marker protein is ~~defined as in any of claims 2 to 6~~ the marker protein of claim 5.

15. (Currently Amended) The double-stranded RNA molecule as claimed in ~~either of claims 13 and 14~~ claim 13, wherein the "sense" RNA strand and the "antisense" RNA strand are covalently linked to one another in the form of an inverted repeat.

16. (Currently Amended) A transgenic expression cassette, comprising a nucleic acid sequence which codes for a double-stranded RNA molecule as claimed in ~~any of claims 13 to 15~~ claim 13 or 15 and which is functionally linked to a promoter functional in plant organisms.

17. (Original) A transgenic vector, comprising a transgenic expression cassette as claimed in claim 16.

18. (Currently Amended) A transgenic plant organism, comprising a double-stranded RNA molecule as claimed in ~~any of claims~~ claim 13 ~~to 15~~, a transgenic expression cassette as claimed in claim 16 or a transgenic vector as claimed in claim 17.

19. (Currently Amended) The transgenic plant organism as claimed in claim 18, selected from the group of plants[[,]] consisting of wheat, oats, millet, barley, rye, corn, rice, buckwheat, sorghum, triticale, spelt, linseed, sugar cane, oilseed rape, cress, arabidopsis, cabbage species, soybean, alfalfa, pea, bean plants, peanut, potato, tobacco, tomato, eggplant, paprika, sunflower, tagetes, lettuce, calendula, melon, pumpkin and zucchini.

20. (Currently Amended) A tissue, an organ, a part, a cell, a cell culture or propagation material, derived from a transgenic plant organism as claimed in ~~either of claims 18 and~~ claim 19.

21. (New) The process as claimed in claim 4, wherein the marker protein is selected from the group consisting of cytosine deaminases, cytochrome P-450 enzymes, indoleacetic acid hydrolases, haloalkane dehalogenases, thymidine kinases, guanine phosphoribosyl transferases,

hypoxanthine phosphoribosyl transferases, xanthine guanine phosphoribosyl transferases, purine nucleoside phosphorylases, phosphonate monoester hydrolases, indoleacetamide synthases, indoleacetamide hydrolases, adenine phosphoribosyl transferases, methoxinine dehydrogenases, rhizobitoxin synthases, 5-methylthioribose kinases and alcohool dehydrogenases.

22. (New) The process as claimed in claim 21, wherein the marker protein is encoded by

a) a sequence described by the GenBank accession number S56903, M32238, N0003308, AE009419, AB016260, N0002147, M26950, J02224, V00470, V00467, U10247, M13422, X00221, M60917, U44852, M61151, AF039169, AB025110, AF212863, AC079674, X77943, M12196, AF172282, X04049 or AF253472

b) a sequence according to SEQ ID N0: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40,42, 44, 46 or 48.

23. (New) The process as claimed in claim 2, wherein the marker protein is selected from the group consisting of cytosine deaminases, cytochrome P-450 enzymes, indoleacetic acid hydrolases, haloalkane dehalogenases, thymidine kinases, guanine phosphoribosyl transferases, hypoxanthine phosphoribosyl transferases, xanthine guanine phosphoribosyl transferases, purine nucleoside phosphorylases, phosphonate monoester hydrolases, indoleacetamide synthases, indoleacetamide hydrolases, adenine phosphoribosyl transferases, methoxinine dehydrogenases, rhizobitoxin synthases, 5-methylthioribose kinases and alcohool dehydrogenases.

24. (New) The process as claimed in claim 23, wherein the marker protein is encoded by

a) a sequence described by the GenBank accession number S56903, M32238, N0003308, AE009419, AB016260, N0002147, M26950, J02224, V00470, V00467, U10247, M13422, X00221, M60917, U44852, M61151, AF039169, AB025110, AF212863, AC079674, X77943, M12196, AF172282, X04049 or AF253472

b) a sequence according to SEQ ID N0: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40,42, 44, 46 or 48.

25. (New) The process as claimed in claim 2 or 3, wherein the nucleic acid sequence to be inserted into the genome of the plant cell or of the plant organism comprises at least one expression cassette capable of expressing, under the control of a promoter functional in plant cells or in plant organisms, an RNA and/or a protein which does not cause the expression, amount, activity and/or function of a marker protein to be reduced.

26. (New) The process as claimed in claim 2 or 3 for preparing transformed plant cells or organisms, further comprising:

a) transforming a population of plant cells which comprises at least one non-endogenous (preferably non-plant) marker protein capable of converting directly or indirectly a substance X which is nontoxic for said population of plant cells into a substance Y which is toxic for said population, with at least one nucleic acid sequence to inserted in combination with at least one nucleic acid sequence coding for a double-stranded marker protein ribonucleic acid sequence or an expression cassette or expression cassettes ensuring expression thereof ribonucleic acid sequence capable of reducing the expression, amount, activity and/or function of said marker protein,

b) treating said population of plant cells with the substance X at a concentration which causes a toxic effect for nontransformed cells, due to the conversion by the marker protein,

c) selecting transformed plant cells (and/or populations of plant cells, such as plant tissues or plants) whose genome contains said nucleic acid sequence and which have a growth advantage over nontransformed cells, due to the action of said double-stranded marker protein ribonucleic acid sequence, from said population of plant cells, the selection being carried out under conditions under which the marker protein can exert its toxic effect on the nontransformed cells,

d) regenerating fertile plants, and

e) eliminating by crossing the nucleic acid sequence coding for the marker protein and isolating fertile plants whose genome contains said nucleic acid sequence but does not contain any longer the sequence coding for the marker protein.

27. (New) A double-stranded RNA molecule, comprising

a) a "sense" RNA strand comprising at least one ribonucleotide sequence which is essentially identical to at least a part of the "sense" RNA transcript of a nucleic acid sequence coding for a marker protein, and

b) an "antisense" RNA strand which is fully complementary to the RNA sense strand under a).

28. (New) The double-stranded RNA molecule as claimed in claim 13, wherein the marker protein is the marker protein of claim 6.

29. (New) The double-stranded RNA molecule as claimed in claim 27, wherein the "sense" RNA strand and the "antisense" RNA strand are covalently linked to one another in the form of an inverted repeat.

30. (New) The double-stranded RNA molecule as claimed in claim 27, wherein the marker protein is the marker protein of claim 5.

31. (New) The double-stranded RNA molecule as claimed in claim 27, wherein the marker protein is the marker protein of claim 6.